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08/888,361 07/03/97 BARSON

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EXAMINER

LM02/1005

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ART UNIT

PAPER NUMBER

2762

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/888,361

Applicant(s)
Barson, Paul Colin et al

Examiner
Wilbert L. Starks, Jr.

Group Art Unit
2762



☒ Responsive to communication(s) filed on Jul 26, 1999

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-6, 8, and 10-22 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-6, 8, and 10-22 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

1. Applicant cancels claims 7 and 9. Claims 1-6, 8, and 10-22 are at issue in this action.

The 112 2nd paragraph rejection of claim 8 is withdrawn.

Response to Amendment

2. On a preliminary note, Examiner commends Applicant's clarity and thoroughness in the presentation of his arguments.

3. Applicant amends claims 1-6, 8, 10-13, 18, 21, and 22 in order to overcome Examiner's rejection of the claims under 35 U.S.C. §101 and to distinguish his invention from the prior art. Examiner finds that the amendments are not sufficient to overcome the rejection. In substance, Applicant amends to include the "...detecting of anomalies in the transmission of messages by an entity..." Applicant argues, furthermore, that "...detected anomalies in the transmission of messages by an entity..." is a "useful, concrete, and tangible result."

Examiner understands how Applicant could arrive at this conclusion. If the "useful, concrete, and tangible" standard is considered in isolation, such a conclusion is a natural one. In fact, one could argue that if the standard is considered independently from settled 35 U.S.C. §101 doctrine, as promulgated by the U.S. Supreme Court, reasonable persons could differ as to its meaning and guess as to its proper application.

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However, in *State Street Bank*, the standard was *not* presented in isolation and was presented in relation to settled Supreme Court doctrine. It is necessary for the standard to be read in light of Supreme Court decisions. Examiner will first give an intuitive, orientation to his view on this issue, then Examiner will show how this view is supported by the “useful, concrete, and tangible” standard as illuminated by Supreme Court doctrine.

Applicant’s “...detecting of anomalies in the transmission of messages by an entity...” is not concrete or tangible. The claimed invention remains at the level of abstraction of an abstract idea or a logical algorithm. The claimed invention is analogous to the principles in Shannon information theory. On many levels, that field of mathematics involves the detecting of order in the transmission of messages by an entity. In that case, the detected “order” in Shannon information theory is analogous to the detected “anomalies” in the current application. In the context of high entropy transmissions (encrypted signals) detected “order” is definitely a detected “anomaly.”

By definition, Shannon information theory is not patentable subject matter because it is an abstract idea. Likewise, Applicant’s invention is disclosed abstractly from any limitations to practical applications. Intuitively, Applicant’s invention is not patentable subject matter.

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Fine, but how is this analyzed under 35 U.S.C. §101 doctrine? Well, note that Applicant's brief makes extensive use of the decision in *State Street Bank and Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998) to support his arguments.

Examiner believes *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994) controls the 35 USC §101 issues in this case for reasons made clear by the Federal Circuit in *AT&T Corp. v. Excel Communications, Inc.*, 50 USPQ2d 1447 (Fed. Cir. 1999). Specifically, the Federal Circuit in that case made clear that the act of "taking several abstract ideas and manipulating them together adds nothing to the basic equation." *AT&T v. Excel* at 1453 quoting *In re Warmerdam*, 33 F.3d 1354, 1360 (Fed. Cir. 1994). Examiner believes that Applicant's detected "**anomalies** in the transmission of messages by **an entity**" is just such an abstract idea.

Examiner bases his position upon Applicant's own admissions as well as the guidance set forth in *In re Warmerdam* as interpreted by *AT&T v. Excel*. This set of precedents is within the same line of cases as the *State Street Bank* decision and is in complete agreement with that decision. Any attempt by Applicant to use *State Street Bank* to refute Examiner's selection and use of *In re Warmerdam* or *AT&T v. Excel* would be erroneous.

In the *Background of the Invention*, Applicant defines "anomalies" as follows:

"Anomalies are any irregular or unexpected **patterns within a data set.**"(emphasis added)

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An “anomaly” is a property of an abstract data set, as admitted by Applicant. As such anomalies are “abstract ideas.” Specifically, the Court held that:

“Today we hold that *the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price*, constitutes a practical application of a mathematical algorithm, formula, or calculation because it produces ‘a useful, concrete and tangible result’ -- *a final share price momentarily fixed for recording purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.*” (emphasis added) *State Street Bank* at 1601.

True enough, that case later eliminated the “business method exception” in order to show that business methods were not per se nonstatutory, but the court clearly *did not* go so far as to make business methods *per se* statutory. A plain reading of the excerpt above shows that the Court was very specific in its definition of the new practical application. It would have been much easier for the court to say that “business methods were per se statutory” than it was to define the practical application in the case as “...the transformation of data, representing **discrete dollar amounts**, by a machine through a series of mathematical calculations into a final share price...” The court was being very specific. Additionally, the court was also careful to specify that the useful, concrete and tangible result” it found was “a final share price momentarily fixed for recording purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.”

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Applicant cites no such specific results to define a useful, concrete and tangible result. Neither does applicant specify the associated practical application with the kind of specificity the Federal Circuit used.

Furthermore, in the case *In re Warmerdam*, the Federal Circuit held that:

“the dispositive issue for assessing compliance with Section 101 in this case is whether the claim is for a process that goes beyond simply manipulating ‘abstract ideas’ or ‘natural phenomena’ ... As the Supreme Court has made clear, ‘[a]n idea of itself is not patentable, ... *taking several abstract ideas and manipulating them together adds nothing to the basic equation.*” *In re Warmerdam* 31 USPQ2d at 1759 (emphasis added).

In the present case, the Examiner found that Applicant used a data set and manipulated them together to detect “anomalies” -- that were admitted by applicant to be “patterns within a data set” -- abstract by definition. Under *Warmerdam*, the result of such manipulations is not statutory, therefore, under *State Street Bank*, this could not be a “useful, concrete and tangible result”. There is only manipulation of abstract ideas.

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True enough, *Warmerdam* was decided before *State Street Bank*, but as mentioned before, *Warmerdam* is within the *Alappat* -- *State Street Bank* line of cases that was discussed in *State Street Bank*. Furthermore, the Federal Circuit validated the use of *Warmerdam* in its more recent *AT&T Corp. v. Excel Communications, Inc* decision. In that case the court noted that:

“Finally, the decision in *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994) is not to the contrary. *** The court found that the claimed process did nothing more than manipulate basic mathematical constructs and concluded that ‘taking several abstract ideas and manipulating them together adds nothing to the basic equation’; hence, the court held that the claims were properly rejected under §101 ... Whether one agrees with the court’s conclusion on the facts, the holding of the case is a straightforward application of the basic principle that mere laws of nature, natural phenomena, and abstract ideas are not within the categories of inventions or discoveries that may be patented under §101.”(emphasis added) *AT&T Corp. v. Excel Communications, Inc.*, 50 USPQ2d 1447, 1453 (Fed. Cir. 1999).

The fact that the invention is merely the manipulation of *ideas* is indisputable. On that basis, the necessary conclusion in this case, under *AT&T* and *Warmerdam*, is straightforward and clear. The claims take several abstract ideas and manipulate them together adding nothing to the basic equation.

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Specific computer configurations necessary for the implementation of the invention were not disclosed. Computer implemented methods were not disclosed on specific types of computer readable media.

On these bases, the claims were properly rejected under §101. None of the §101 rejections are withdrawn.

Response to Arguments

4. Applicant's arguments filed 26 JULY 1999 have been fully considered but they are not persuasive.
5. Applicant argues, in substance, the following:
 - A. Examiner has admitted in the rejection of claim 9 that Hunt et al. does not disclose updating a signature by a weighted averaging with a second signature. On this basis, Applicant incorporates that feature into claims 1 and 12. The "point of novelty" is therefore incorporated by reference into claims 2-7 by virtue of their dependency on claim
 - B. Regarding the 35 U.S.C. §103(a) rejections of claims 9, 13-19, and 22, Applicant argues that:
 - I. Hunt et al. does not use neural networks.

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- ii. Peterson et al uses a self organizing map while applicant's invention must be trained in advance.
- C. The prior art does not disclose a system that is capable of handling "macro"/"micro" data behaviors.
- D. The prior art does not use "signatures".
- E. There are no predictive model in the prior art.

Argument "A"

Examiner would like to remind Applicant that the "admission" that the feature was not present in the primary piece of prior art was presented in the context of a 35 U.S.C. §103(a) rejection of that claim. Applicant's inclusion of that feature into the claim upon which claim 9 depends does not overcome the original obviousness of the feature. The same motivation for the combination that was present in claim 9 is also present in the inclusion of the feature into the claim upon which it depends (claim 1). Instead of the original 102 rejection, claims 1-7, and 12 are now rejected under 35 U.S.C. §103(a).

Reiterating the motivation in the original action, Peterson et al discloses that the use of a time averaged feature vector produces a higher level of confidence in the data.

Motivation -- A higher level of confidence in the data would have been a highly desirable feature in the neural network art due to its higher accuracy and Peterson et al. recognizes that a

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higher level of confidence in the data would be expected when the time averaged feature vector of Peterson et al is utilized in the art of Hunt et al.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to combine Peterson et al with Hunt et al to obtain the invention as originally specified in claim 9 and presently specified in claims 1-7 and 12.

Argument "B"

Applicant is incorrect regarding whether the Hunt et al uses a neural network. It is true that the English words "neural network" are not present, but the **structure** of a neural network is present and is illuminated in that reference **mathematically** -- a more *precise* disclosure of a neural network than the mere disclosure of the word "neural network". To illustrate this point, Examiner directs Applicant's attention to Hunt et al., col. 9, lin. 28-46. Compare the equation disclosed there with the equation of a neural network model disclosed in the basic textbook Korn, Granino A., *Neural Networks and Fuzzy-Logic Control on Computers and Workstations*, The MIT Press, Cambridge, Mass., 1995, page 14. The disclosure is the same. On this basis, Examiner finds that Hunt et al. does, in fact, use a neural network structure.

Regarding the use of a self organizing map (SOM) rather than another type of neural network is irrelevant. Claims 9, 13-19, and 22 do not disclose the use of a particular type of neural network. SOM type neural networks are well within the scope of those disclosures. On

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this basis, Examiner finds that Applicant's argument "B" is not persuasive and no rejections are, thereby, withdrawn.

Argument "C"

The handling of "micro"/"macro" level events over time is the whole point of using a time averaged feature vector. Applicant discloses the time averaging function in order to deal with this issue. Peterson et al. discloses the same structure in the same context. Applicant's assertion that Peterson does not address the issue is inaccurate and is made clear by the structure of the prior art. The rejections related to that argument stand.

Argument "D"

It is not accurate to say that the prior art does not use "signatures". The prior art, just as the present application does, uses a "feature vector" to represent the "signatures". Applicant's statement on this point is erroneous and the rejections related to this point stand.

Argument "E"

Applicant argues that the prior art does not use predictive modeling. This is a clearly erroneous statement. Examiner directs Applicant's attention to Peterson et al., claims 1, 16, 17, 18, 19, and 20. Peterson et al is replete with predictive modeling disclosures. Applicant's argument is unpersuasive on this point and the rejections related to this point stand.

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Conclusion

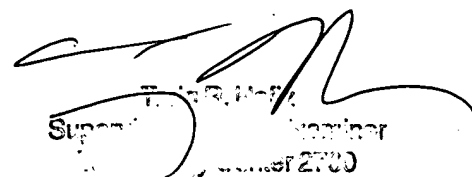
6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wilbert L. Starks, Jr. whose telephone number is (703) 305-0027. Alternatively, inquiries may be directed to Supervising Patent Examiner Tariq Hafiz whose telephone number is (703) 305-9643.

wls

September 30, 1999


Tariq Hafiz
Supervising Patent Examiner
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